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North Acton Station Feasibility Study Summary of Latest Findings

LOCAL PLAN SUPPORTING STUDY

June 2018

MAYOR OF LONDON

31. North Acton Station Feasibility Study Summary of Latest Findings

Document Title	North Acton Station Feasibility Study Summary of Latest Findings
Lead Author	Steer Davies Gleave (on behalf of Transport for London)
Purpose of the Study	This report provides a summary of the latest findings from a feasibility study which is underway to examine options for enhancing the accessibility and capacity of North Acton Underground station and improving of the permeability of the site.
Key outputs	A summary is provided of: • The background and context to the study • The options selection process that has been undertaken • Work that is currently underway to develop the preferred option
Key recommendations	Key findings from the study to date are as follows: • North Acton station has experienced a significant increase in passenger demand over the past few years and is expected to accommodate further growth due to the large-scale development that is planned in the area. • The existing station already experiences congestion at peak times and there is no provision for step-free access between the ticket hall and the platforms. • Should a scheme be progressed to enhance accessibility and capacity at the station, there are opportunities to improve permeability to the station by the provision of a new bridge link to the north and to improve staff facilities at the station.
Key changes made since Reg 19 (1)	This study replaces the previous North Acton Station study because it identifies a long-list of 10 options and a shortlist of 3 options for meeting the objectives for the station and identifies a preferred option which is now being investigated in further detail.
Relations to other studies	Interfaces with the Old Oak Strategic Transport Study and the Park Royal Transport Strategy.
Relevant Local Plan Policies and Chapters	• Policy P7 North Acton and Acton Wells • Policy T5 Rail

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1 Introduction

1.1 Steer Davies Gleave has been commissioned by Transport for London (TfL) to lead a project team undertaking a feasibility study of options to provide step-free access and capacity improvements to North Acton London Underground station. The team includes Weston Williamson + Partners, Mott MacDonald and Regent Resourcing. The London Borough of Ealing (LB Ealing) and the Old Oak and Park Royal Development Corporation (OPDC) have also sponsored the study.

1.2 The aims of this study are:

- To review previous study options;
- To develop at least three potential options that could be refined to a single preferred option; and
- To identify and develop a feasibility-level design for the preferred option, considering the potential for a phased implementation if feasible.

1.3 The preferred option should:

- provide step-free access;
- provide enhanced capacity;
- improve permeability / connectivity to other sites and links to buses;
- improve back of house facilities (station office, mess facilities etc); and
- deliver oversite development where possible.

1.4 This document provides an overview of the feasibility study and identification of a preferred option on which further, more detailed work is being undertaken. Note that the study has not been completed and the preferred option identified may evolve Progression of the project to the next stage of design and implementation will be subject to the scheme having a positive business case and securing of the necessary funding.

2 Background

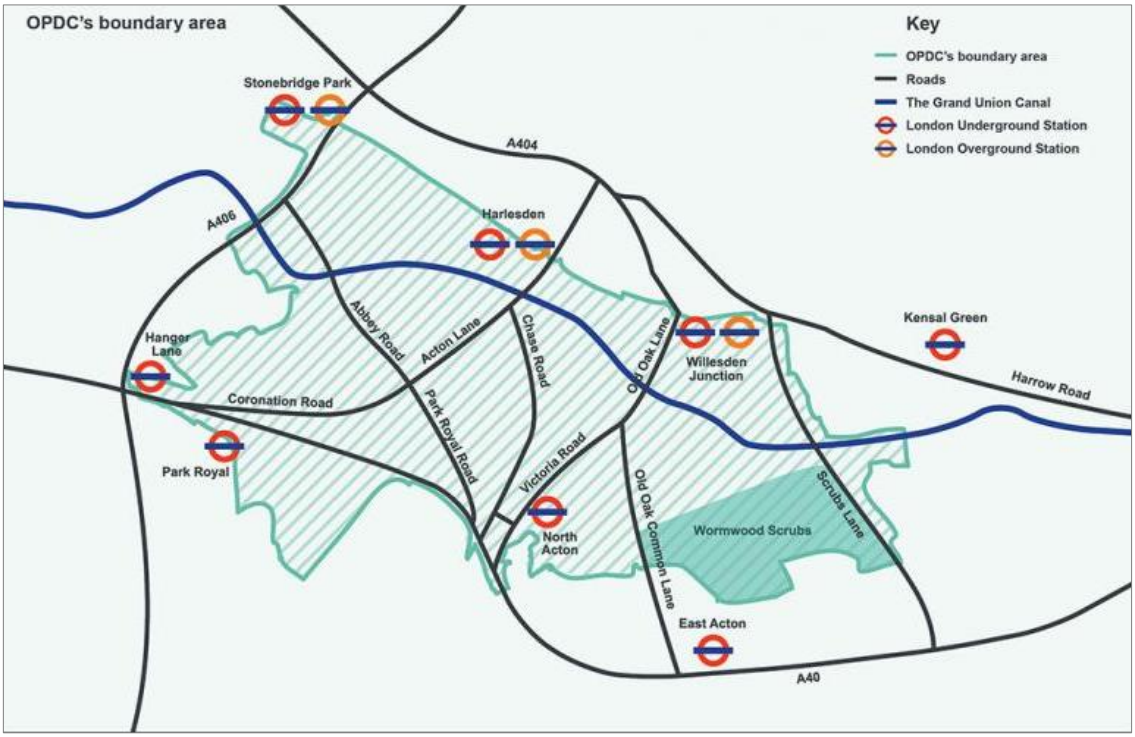
Site Location

Old Oak and Park Royal Opportunity Area

2.1 The station lies within the Old Oak and Park Royal Opportunity Area, which stretches across the boroughs of Brent, Ealing and Hammersmith & Fulham. The creation of a transport super-hub at Old Oak Common, linking Crossrail, High Speed 2 and London Overground services, will catalyse huge growth. North Acton's position within the area is shown in Figure 2.1.

2.2 The current Opportunity Area Planning Framework, produced by the Old Oak Common and Park Royal Development Corporation (OPDC), indicates the area could accommodate up to 25,500 new homes and 65,000 jobs which would deliver a major contribution to London's housing and employment needs.

Figure 2.1: Location of North Acton station within OPDC development area



Local location

2.3 North Acton Underground station sits in a cutting between Victoria Road and Chase Road bridges within the London Borough of Ealing. It is served by Central line services, which run between Ealing Broadway and West Ruislip in the west to Epping in the east.

Figure 2-2: View of station platforms from platform overbridge

Figure 2.3: View of station from platform 2&3

2.4 The area around the station has already undergone significant development in recent years, with a number of new residential and mixed use buildings being completed or under construction. 'Rehearsal Rooms', a 16 and 13 storey residential development, is immediately to the west of the station and further west lies a 19 storey student halls of residence for Imperial College. South of the site there are three recent residential towers (Ebbett, Trentham

and Poulton Courts) while Holbrook House, a 24-storey student accommodation, is under construction to the east of the station.

2.5 The site immediately to the south of the station entrance, which was formerly occupied by a petrol filling station, is currently being transformed into an exemplar area of public space by LB Ealing to be known as 'Station Square'. This will help to improve access to North Acton station, including a step-free route from Victoria Road to the ticket hall building, and facilitate stronger links with the development sites to the south of the station.

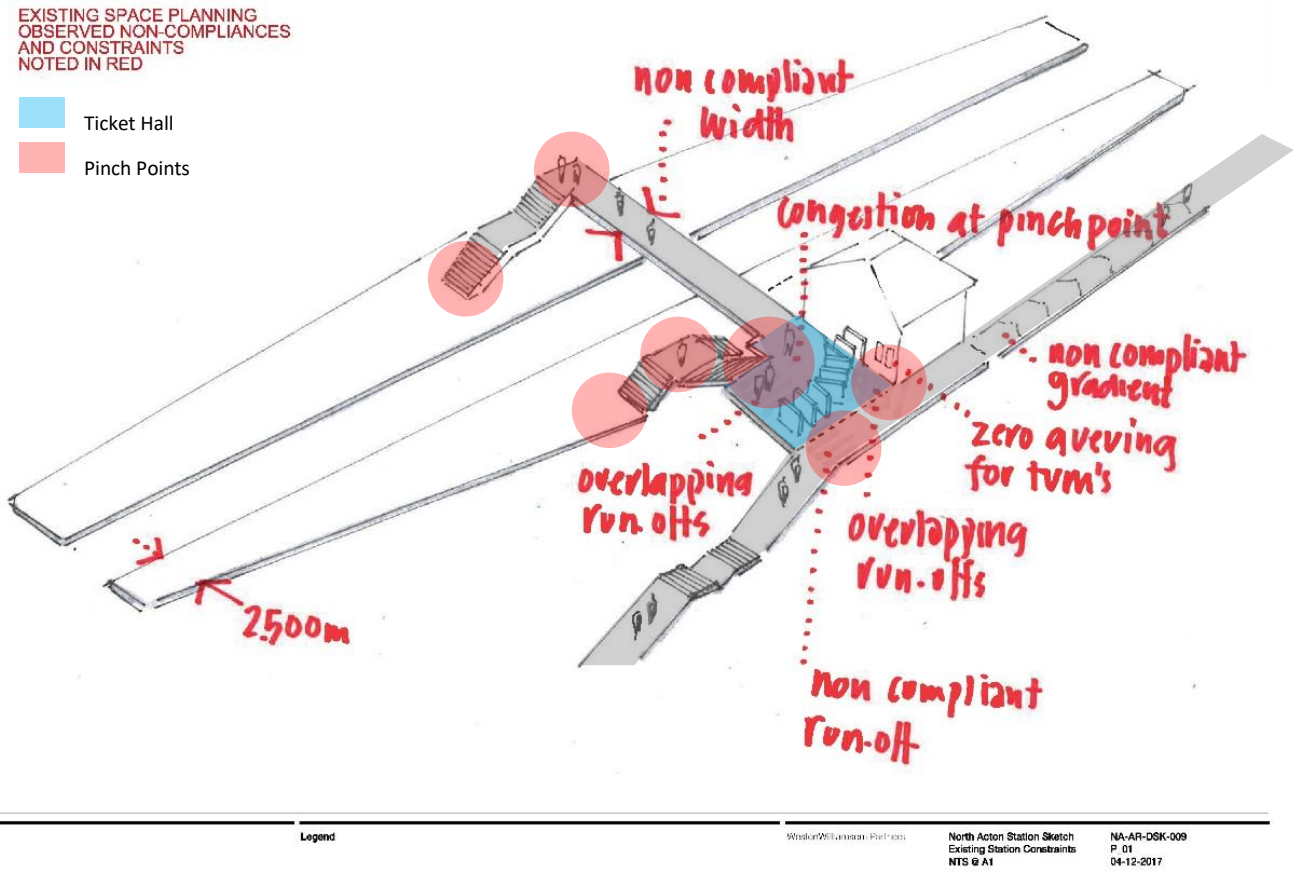
Figure 2.4: Architect's impression of Station Square looking from the station entrance

Case for change

Existing issues

2.6 The existing station opened in 1923 and was modified in 1968 with an extension to the original ticket hall building. The existing station configuration has a number of constraints which limit its capacity, including a small ticket hall, limited stair capacity between the ticket hall and the platforms. Existing space-related constraints at the station are illustrated in Figure 2.5.

Figure 2.5: Existing space issues diagram



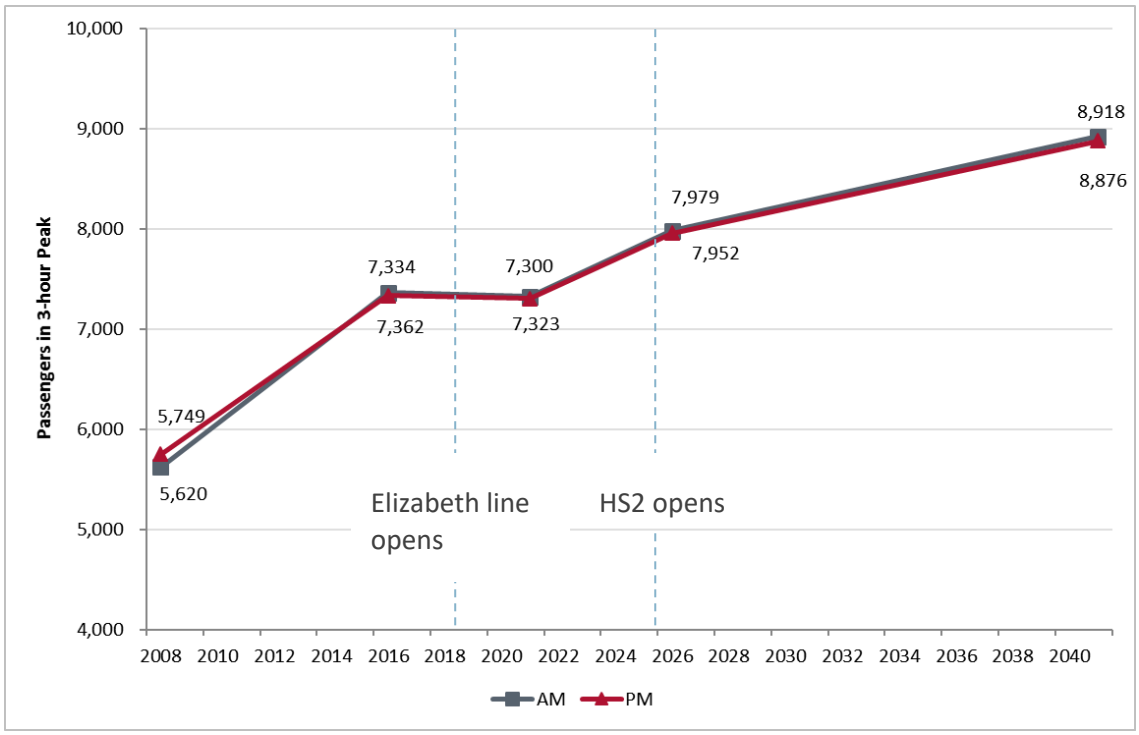
2.7 Currently there is no step-free access provision at the station for passengers. The delivery of the Station Square scheme by LB Ealing (which will provide step-free access from street level to station ticket hall) plus the fact that North Acton station is on the point that the Central line splits into two western branches adds to London Undergrounds case for delivering step-free access as a priority to the station.

Future demand

2.8 Whilst the area around North Acton station has experienced lots of development in recent years, significant further growth is expected particularly to the sites to the east and north of the station. Improving local connectivity to the station from all directions, and particularly the 'sword' site to the north which is expected to be redeveloped post opening of High Speed 2 in 2026, is key to improving accessibility and helping to maximise the opportunities for regeneration of the area.

2.9 Transport for London have undertaken modelling predictions for both North Acton Station and the background demand on the surrounding transport network. The forecast increase in demand at North Acton between 2016 and 2041 is presented in Figure 2.5. This increased demand will exacerbate the existing problems at North Acton station.

Figure 2.5: Predicted North Acton Station demand to 2041



Source: Transport for London

2.10 North Acton station has seen a sharp increase in demand during the last decade. Although this is likely to plateau over the next five years as a result of the opening of the Elizabeth line which will provide a faster route into central London for some passengers who would have otherwise used the Underground, demand will continue to grow thereafter as local developments are completed. By 2041 North Acton is predicted to see passenger numbers 21% above their 2016 levels; a 54% increase relative to the number of passengers in 2008.

2.11 Overall, the case for change at the station is closely linked to its role in supporting growth in the surrounding area. This growth and schemes such as Station Square provides a good opportunity for delivering step-free access and capacity enhancements at the station to accommodate future demand. There is a case for improving local connectivity to the station, including between the station and sites to the north, to enhance the accessibility and regeneration potential of these sites. Subject to the extent of modifications made to the station there may also be a case for improving back of house facilities for station staff.

Previous Studies

2.12 Several previous studies have been undertaken to explore opportunities for the issues looked at the issues at North Acton station. These previous studies have provided a useful foundation for this study to build on.

Step-Free Access Studies

2.13 Providing step-free access (SFA) at North Acton station has been investigated in three previous studies with slightly different briefs, looking at how to introduce SFA (2007 SFA and upgrade study), quick wins to improve the station (2012 SFA & Upgrade study) and a pre-feasibility study in 2015-16. These reports have been reviewed as background to this study.

North Acton Interchange Pre-Feasibility Study (2015-16)

2.14 The most recent study, published in 2016, involved Steer Davies Gleave leading a team including Gensler (Architects) and Gardiner & Theobald (Quantity Surveyors) in an initial options sift. The study recognised that the station was expected to see significant additional demand as a result of housing development, but the brief did not include the requirement for modelling. It concluded by recommending a feasibility study for the preferred option which would:

- focus more on structural considerations and building programme to refine the costs and phasing further;
- investigate how the existing Great Western heritage features of the existing station could be retained;
- ensure the pedestrian links through the HS2 Sword Site are retained; and
- investigate the development potential of the southern railway embankment to help fund station development.

Study Aims

2.15 Whilst the 2016 study reached a preferred option, the client team wanted to keep all options on the table and ensure that all feasible options had been considered in light of any changes since the previous work. Therefore, the aims of this study were:

- to review previous study options;
- to develop at least three potential options that could be refined to a single preferred option; and
- to identify and develop a feasibility-level design for the preferred option, considering the potential for a phased implementation if possible.

2.16 The preferred option should:

- provide step-free access;
- provide enhanced capacity and address existing constraints in the ticket hall and at platform level;
- improve permeability / connectivity to other sites and links to buses;
- improve back of house facilities (station office, mess facilities etc); and
- deliver oversite development where possible.

Constraints

2.17 The project team faced a number of constraints when designing options for the station due to site conditions and no safeguarding for future developments since conception and subsequent station works. Key limitations taken into account include:

- A need to maintain the existing alignment of the track;
- The presence of a large number of existing cables running the length of the bank on the south side of the station (Figure 2.6), which would be difficult to relocate; and
- Means of access to the station for construction vehicles due to the limited width of existing pedestrian routes (there is currently no road access to the station ticket hall).

Figure 2.6: Cables running the length of the south side of the station

2.18 The older parts of the existing station are currently being considered for being locally listed by the OPDC. Local listing does not provide a statutory requirement to retain features, however the next stage of the station design will investigate which of the features could be reused, for example some of the masonry of the original station building.

3 Options Selection

3.1 In order to respond to the study objectives as set out in section 1 of this report, the project team initially developed a long-list of ten options in consultation with the client group which included representatives from TfL, London Underground, the OPDC and LB Ealing. These options comprised various combinations of ticket hall layouts, lift locations and new pedestrian links to the station, and are summarised in Table 3.1 below.

Table 3.1: Long-list of initial options

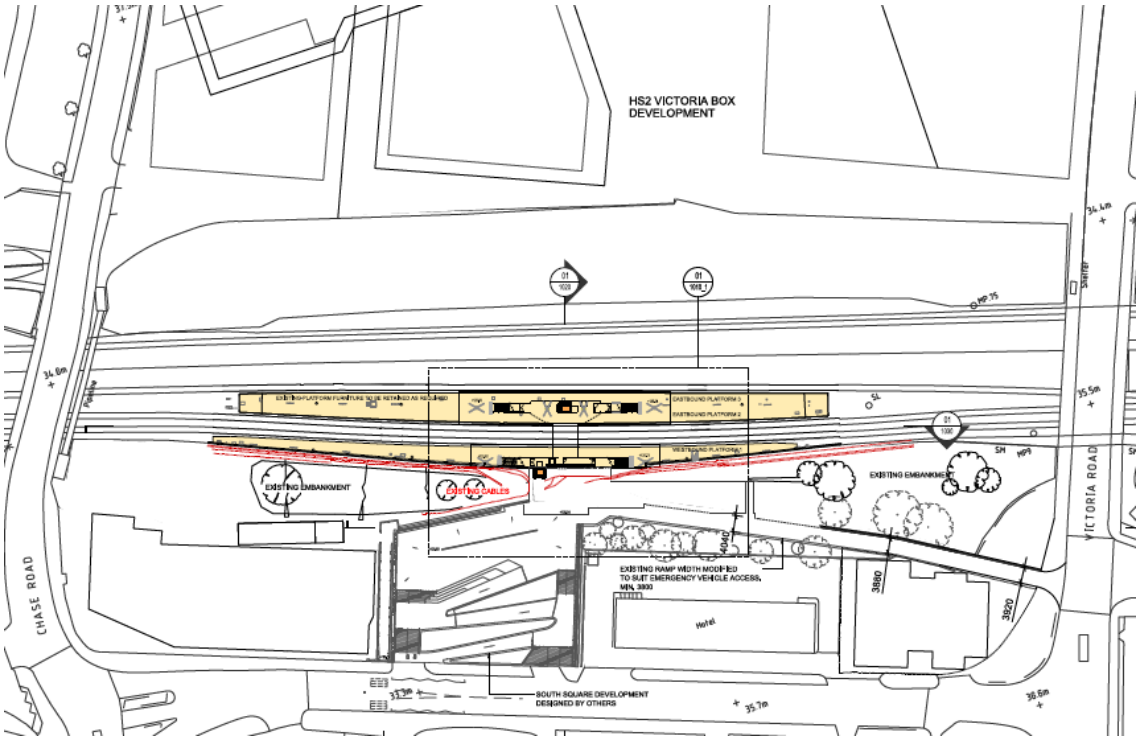
Option	Main features	Shortlisted?
1	Base option which builds on the 2006-2008 option (broadly retaining the stair and link bridge core)	Yes
2	Same as option 1 but with unpaid bridge link on east side of existing station building	No
3	A new unpaid overbridge with a new ticket hall on the east side of the existing station building above the tracks with central staircase to platforms	No
4	Same ticket hall as Option 3, but two smaller side stairs rather than a large central staircase from the new ticket hall to overbridge	No
5	Same ticket hall as Option 3, but one upper level corridor to the upper level island platform lift and no corridor to platform 1 lift	No
6	Same ticket hall as Option 1 but with an unpaid and paid link to the north, fully integrated into the station, 'landing' within the centre of the HS2 sword site	Yes
7	Same ticket hall as Option 1 with an unpaid link at a variety of different locations and angles to meet the desire line to the south of the station with the development site to the north	No
8	Same ticket hall as Option 1 with reduced the width of the central overbridge in order to reduce costs	No
9	New extension to the east of the existing station, housing the staff accommodation which allows for a larger ticket hall	No
10	A fully integrated single entrance upper level ticket hall to the west of the station with unpaid, but fully integrated link to the north of the railway cutting	Yes

3.2 Of the long-list of ten options, Options 1, 6 and 10 were shortlisted for further development and review through workshops with the client group on the basis that they each met the study objectives whilst providing a variety of benefits with varying costs and construction programmes. Each of the three shortlisted options are set out in more detail below.

Option 1

3.3 Option 1 is the base case approach, enhancing capacity and introducing step-free access whilst minimising non-compliances that cannot be removed due to existing dimensional constraints.

Figure 3.1: Option 1 – plan view (ticket hall level)



Benefits

3.4 Option 1 provides:

- Step-free access to both platforms;
- Step-free access to the trains using manual boarding ramps;
- Additional capacity;
- Improved Staff Accommodation facilities; and
- Potential to be developed at detailed design stage to accommodate the future provision of either Options 6 or 10 to create direct links to the future development site (HS2 sword site) north of the Network Rail tracks.

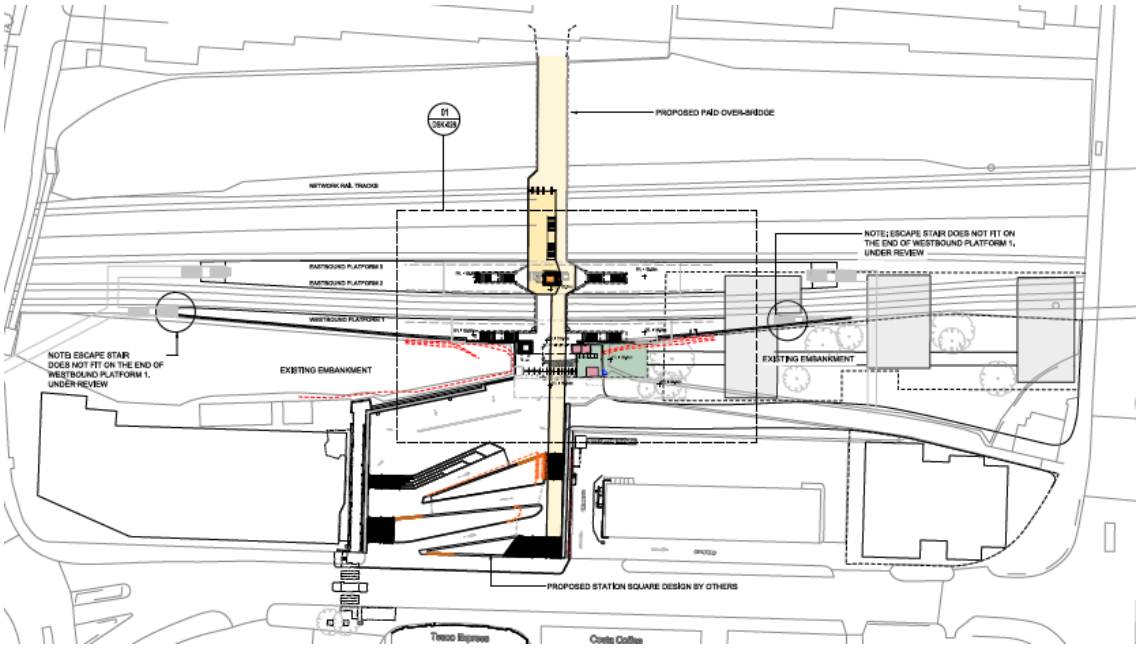
Disadvantages

3.5 No direct connection to the HS2 sword site to the north (adjacent to tracks to the north).

Option 6

3.6 Option 6 provides an unpaid and paid link to the north, fully integrated into the station, with the link 'landing' within the centre of the HS2 sword site to the north.

Figure 3.2: Option 6



Benefits

3.7 Direct link from future development north of the embankment into the station, whilst also providing an unpaid link to the south beyond.

3.8 A direct link into the station from the future development site on the north side of the Network Rail tracks would increase the accessibility of the development site and reduce the walking time to/from the station. This could therefore increase the value of the future development site.

Disadvantages

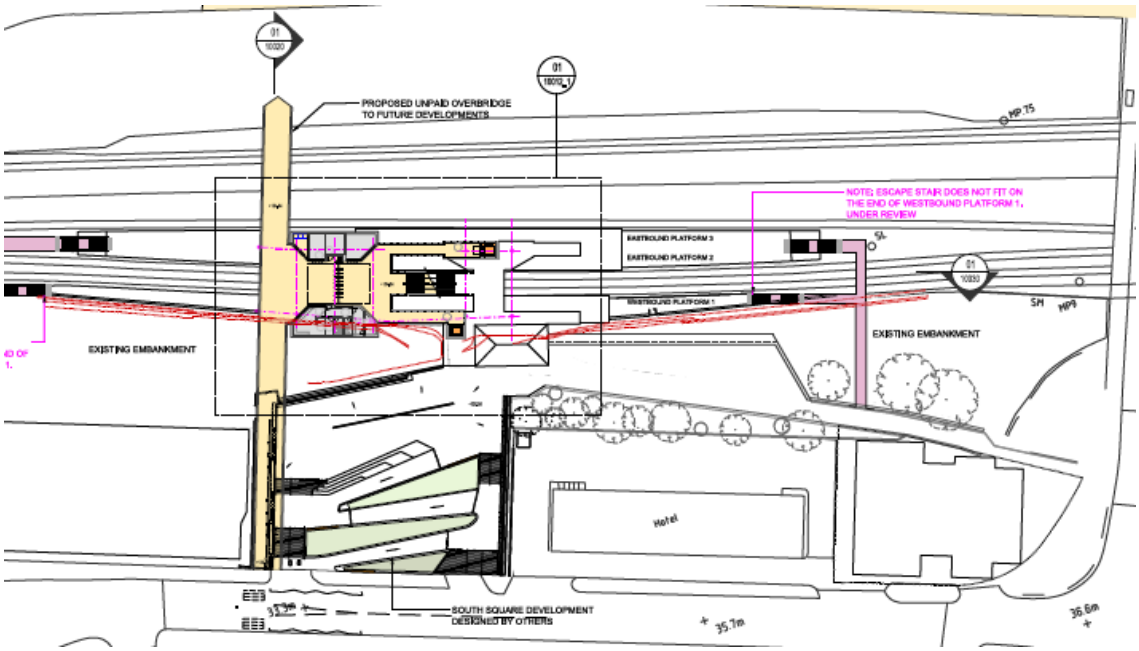
3.9 Less unpaid permeability between the north and south side of the tracks compared to Option 10.

3.10 Construction over Network Rail tracks to provide new bridge link to HS2 site to the north (including associated construction access and future asset maintenance access agreements with Network Rail) means this option is more expensive than Option 1.

Option 10

3.11 Option 10 provides a fully integrated single entrance upper level ticket hall with unpaid, but fully integrated link to the north of the railway cutting.

Figure 3.3: Option 10 (Upper Level)



Key features

3.12 Option 10 uses the Option 1 base case as ground level and includes the additional upper level to provide staff accommodation and permeability via the unpaid bridge. The option also includes a choice as to whether to eventually close the existing station entrance and repurpose the space for retail for example, allowing Station Square to be redeveloped in the future.

3.13 The station building extension has developed as captured in the single preferred option.

Benefits

3.14 All key drivers of the project are sufficiently provided within Option 10.

Disadvantages

3.15 Option 10 is likely to be the most expensive of the three options and the size of the new structure requires a lengthy construction programme.

Selection of preferred option

3.16 Modifications were made to the shortlisted options, such as the removal of the bridge from Option 1 which would have been difficult to operate and ensure accessibility as well as unlikely to pass a business case test due to its proximity to Chase Road bridge.

3.17 Detailed assessment criteria were developed in consultation with the client group to enable the selection of a preferred option. The assessment criteria involved scoring each of the options against a range of aspects, which were categorised into themes as shown in Table 3.2.

Table 3.2: Assessment criteria for shortlisted options

Scheme Objective	Quality of Scheme Themes
Provide step-free access	Quality of step-free access
Add further capacity	Capacity Enhancement
	Operability
	Minimisation of disruption to operations during construction
Increase visibility of station from surrounding area; optimise interchange; increase permeability	Quality of wider interchange and compatibility with Local Plan
Phasing opportunities and buildability	Approvals / Consents / Interfaces (inc. 3rd party)
	Confidence in buildability

3.18 Once the options had been scored the estimated delivery costs and construction programme durations of the three options were then also considered, with ranges between £20m to £30m delivery costs and 24 months to 42 months construction durations respectively. This enabled a value for money ratio for each option to be calculated and each of the options to be ranked relative to each other.

3.19 Based on this approach, the options were ranked as follows:

- 1st – Option 1
- 2nd – Option 6
- 3rd – Option 10

3.20 Option 1 was therefore taken forward as the preferred option. The preferred option is being subjected to further technical analysis. The aim of this further analysis is to develop a feasibility-level design which as far as possible meets the study objectives and addresses existing constraints. Aspects being considered further include:

- Key design considerations;
- Modelling to 2041 forecast levels of demand and testing with an extra 35%;
- Detailed engineering considerations;
- Detailed construction methodology;
- An assessment of the finalised design against London Underground standards;
- Future safeguarding of options 6 and 10 (to allow for the future creation of a new pedestrian bridge to the HS2 site to the north when this becomes available for redevelopment; and
- Detailed cost breakdown with value engineering options (for example, narrowing the platform overbridge to reduce costs).

3.21 Consideration is also being given to the scope for oversite development at or adjacent to the station.

4 Next steps

4.1 Details of the design development will be set out in a full feasibility report that is due to be completed by late summer 2018.

4.2 The design of the scheme for the preferred option will be amended in a number of instances to reflect LU requirements and those from other stakeholders. As part of the further analysis several issues and outstanding areas of non-compliance have been identified that will need to be resolved at a subsequent phase of design through further engagement with stakeholders.

4.3 As part of the next phase of design beyond the current feasibility study, the following activities, inter alia, are recommended subject to funding:

- Consultation with relevant LU standard holders on concessions and possible approval for non-compliances associated with the preferred option;
- A full project risk review be undertaken;
- Production of a 3D design model;
- Development and endorsement of a full Fire Safety and Evacuation Strategy; and
- Procurement of a range of surveys including asset condition surveys at the existing station.

4.4 Progression of the project to the next stage of design and implementation will be subject to the scheme having a positive business case and securing of the necessary funding. At this stage a full funding package for the scheme has not been identified.

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